

# Education and Wage Differentials in the Philippines

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## Abstract

In the Philippines, an important part of income inequality is associated with the wage difference between the less educated and the better educated. The majority of the least educated are employed in low-paid services jobs and the agricultural sector. Tertiary education is to a large extent a prerequisite for high-paid occupations.

Using the Labor Force Survey 2003–2007, this paper examines disparities in human capital endowment, returns to education, and the role of education in wage differentials in the Philippines. The empirical results show that returns to education monotonically increase—workers with elementary education, secondary education, and tertiary education earn 10 percent, 40 percent, and 100 percent more than those with no education.

The results also show that education is the single most important factor that contributes to wage differentials. At the national level, education accounts for about 30 percent of the difference in wages. It accounts for a higher percentage of the difference for female workers (37 percent) than male workers (24 percent). There are also differences across regions and sectors.

As an economy develops, the demand for skills increases. In the Philippines, efforts to improve education to increase the supply of highly educated people are important not only for long-term growth, but also for helping to translate growth into more equal opportunities for the children of the current generation.

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# Education and Wage Differentials in the Philippines<sup>\*</sup>

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Key Words: Wage differentials, returns to education, inequality

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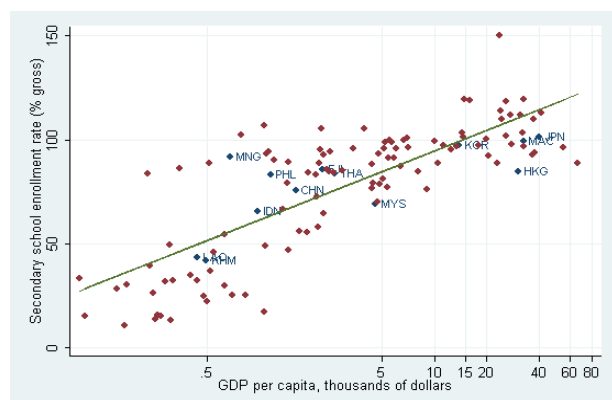
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## 1. Human Capital Endowment in the Philippines

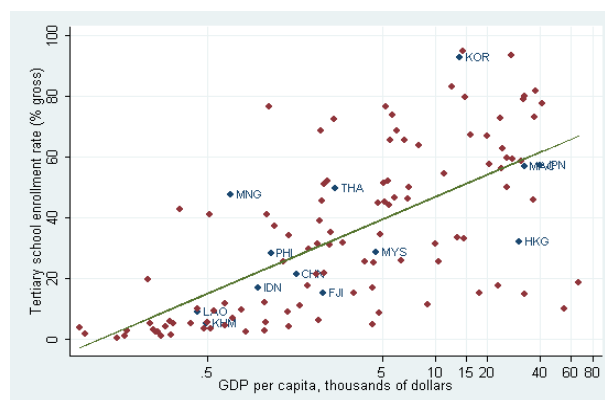
The labor force is relatively well educated in the Philippines compared with many other countries with a similar development level in East Asia. Secondary and tertiary enrollment rates in the Philippines (83 percent and 28 percent respectively) are higher than the averages in East Asia (73 percent and 21 percent) and that in lower-middle-income economies (65 percent and 19 percent) (Figure 1). Challenges, however, remain to catch up with the more advanced economies.

**Figure 1: Gross Enrollment Rates and GDP per capita**



*Note:* The gross enrollment rate of secondary education is regressed on GDP per capita (in log) and a constant. Based on a sample of 121 countries, the slope of the fitted line is 14.4 (significant at the 1 percent level) and the intercept is -37.9.

*Source:* WDI online.



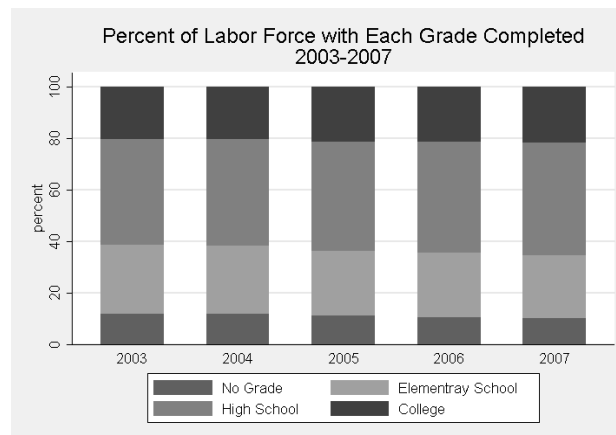
*Note:* The tertiary education gross enrollment rate is regressed on GDP per capita (in log) and a constant. Based on a sample of 121 countries, the slope of the fitted line is 10.6 (significant at the 1 percent level) and the intercept is -50.8.

*Source:* WDI online.

According to the Labor Force Survey (LFS), about 65 percent of the labor force in the Philippines aged 25-64 years completed at least secondary education and 22 percent tertiary education.<sup>1</sup> In 2003-2007, the percentages of labor force that completed at least secondary and tertiary education grew slightly from 62 percent to 65 percent and from 20 percent to 22 percent, respectively (Figure 2).

<sup>1</sup> There are four rounds of Labor Force Survey each year in January, April, July, and October. We use only the October round for this study. We use the pooled data as if they were a single sample from a larger survey fielded over a longer period to calculate the mean level for 2003-2007; and use the single round data to calculate the mean level of each year and examine the changes over time.

**Figure 2: Human Capital Endowment in the Philippines 2003-2007**

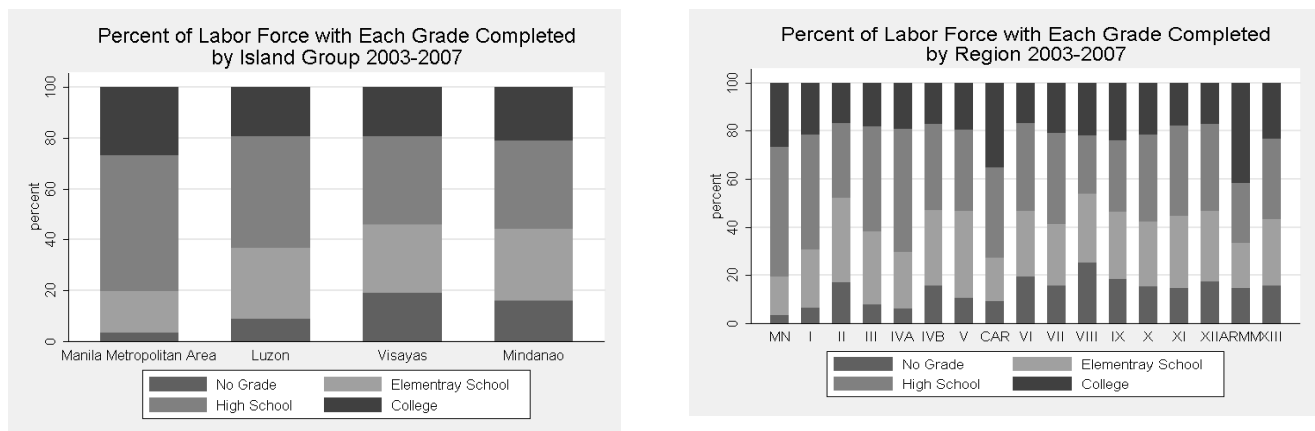


Source: LFS, 2003-2007

Across regions, the education level of the labor force differs significantly (Figure 3 ). The NCR has the best educated labor force (measured by the highest grade attained), followed by the Luzon region; while Mindanao and Visayas have the largest deficits. For example, 54 percent of labor in the NCR has “high school certificate” and 27 percent has “university certificate”, compared to the national average of 42 percent and 21 percent. 19 percent of labor in Mindanao and 16 percent in Visayas have “no elementary school certificate”, compared to the national average of 11 percent. The sharp difference across regions also holds when comparing the ratio of labor force with elementary school certificate.

Within each island region, human capital endowment also differs. For example, within the Luzon region, in Calabarzon, almost half of the labor force has high school certificates and 19 percent has university certificates; while in Cagayas and Bicol, the ratios are less than 33 percent and 17 percent. Within the Visayas and Mindanao regions, where human capital endowment is at the lower end of the spectrum, inequality is also large. Eastern Visayas has the most serious deficit – only 24 percent of the labor force in each region has high school certificate compared to the regional average of 42 percent, while the share with university certificate or above (22 percent) is not far from the national average.

**Figure 3: Distribution of Human Capital by Region**



Source: LFS, 2003-2007

In the Filipino labor force, females are on average better educated than males as those who are less educated tend to choose not to participate in the labor market (Table 1).<sup>2</sup> For example, 32 percent of females in the labor force have completed university education or above compared with only 14 percent of males; only 8 percent of females in the labor force have not completed elementary school education compared with 13 percent of males. As the unemployment rate and daily wage are similar between males and females, the fact that females are better educated suggests, to some extent, that females may in fact still face tougher conditions in the market compared with their male counterparts with similar education background.

**Table 1: Percentages of Labor Market Participants with Different Education by Gender**

<b>Highest Degree Completed</b>	<b>Male</b>			
	<b>No Gade</b>	<b>Elementary School</b>	<b>High School</b>	<b>Some College</b>
2003	14.1	29.2	42.8	13.8
2004	13.8	29.5	43.0	13.6
2005	13.2	28.3	43.9	14.7
2006	12.7	28.3	44.2	14.8
2007	12.3	27.9	45.3	14.5
<b>2003-2007</b>	<b>13.2</b>	<b>28.6</b>	<b>43.9</b>	<b>14.3</b>

<b>Highest Degree Completed</b>	<b>Female</b>			
	<b>No Gade</b>	<b>Elementary School</b>	<b>High School</b>	<b>Some College</b>
2003	8.3	22.1	38.5	31.1
2004	8.0	21.3	38.7	31.9
2005	7.7	20.2	40.0	32.1
2006	6.8	19.8	40.9	32.4
2007	6.6	18.7	41.8	32.9
<b>2003-2007</b>	<b>7.5</b>	<b>20.4</b>	<b>40.0</b>	<b>32.1</b>

*Source:* Authors' calculation based on LFS, 2003-2007

As in many other countries, the youth are better educated than the older generations (Table 2). For example, 49 percent of the labor force aged 15-25 has high school certificate compared with only 23 percent of those aged 55-64, although the difference might already be underestimated as some of the youth may still pursue higher schooling. The large difference in human capital between the older age group, for example 55-64, and the younger age group, for example 15-25 or 25-50, is consistent with achievements in education in the Philippines in the past decades. Less than one out of ten in the labor force younger than 50 has not completed elementary school education, compared to more than one out of five aged 50-65.

<sup>2</sup> In addition to education, household environment, such as household income level, marital status, existence and number of child(ren) and age of child(ren), affects female worker's participation in labor market.

**Table 2: Distribution of Human Capital by Age Group**

Highest Degree Completed	No Grade	Elementary School	High School	Some College
15-24	9.8	27.7	48.7	13.8
25-34	8.4	21.1	45.3	25.3
35-44	11.1	26.2	40.8	21.9
45-54	14.9	28.9	34.1	22.2
55-64	22.8	29.7	22.5	25.0
<b>Philippines</b>	<b>11.0</b>	<b>25.5</b>	<b>42.4</b>	<b>21.0</b>

Source: Authors' calculation based on LFS, 2003-2007

## 2. Education and Job Opportunities

Job opportunities and wages are closely associated with education.<sup>3</sup> The best educated (with a university certificate) have the highest employment rate, followed by the least educated (with no elementary school certificate); the same is true for the employment rate (Table 3). The population with an elementary school certificate or high school certificate has the lowest employment rate. However, the unemployment rate is considerably higher for the better educated – over 9 percent for both with high school certificate and university certificate or above, compared to 3 percent for those with less than elementary education and 5 percent for those with only elementary education. The high unemployment rate among the best educated may to some extent reflect the frictions between supply and demand of high skilled labor and the relatively long time spent in job hunting of individuals in this group. The regional difference in labor performance, for example the low employment and high wage in NCR, may be closely associated with its higher share of better human capital.

**Table 3: Labor Market Performance Indicators by the Highest Grade Attained**

	Participation Rate			Employment Rate (to Working Age Population)			Unemployment Rate (to Participation Rate)		Daily Earnings (2000 PHP)	
	Mean	% Change		Mean	% Change		Mean	% Change	Mean	% Change
No grade	68.4	-0.26 *		66.6	-0.22		2.7	-0.04	106.09	-5.5 ***
Elementary school	58.6	-1.49 ***		55.7	-1.32 ***		4.9	-0.17	126.76	-8.2 ***
High school	59.6	-2.01 ***		54.0	-2.18 ***		9.4	0.57	176.47	-5.7 ***
College	73.2	-3.88 ***		66.3	-2.22 ***		9.3	-1.83	354.86	-9.5 ***
<b>Philippines, 2003-2007</b>	<b>62.4</b>	<b>-1.82</b>		<b>58.1</b>	<b>-1.76</b>		<b>6.8</b>	<b>0.08</b>	<b>195.25</b>	<b>-4.3</b>

Note: Test statistics are shown for significance of change in each indicator in 2003 – 2007: \*, \*\*, and \*\*\* represent significance at 10 percent, 5 percent, and 1 percent, respectively.

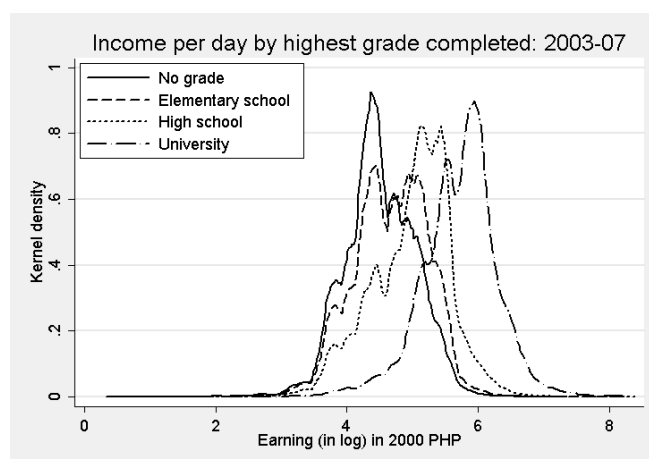
Source: Authors' calculation based on LFS, 2003-2007

The daily wage increases monotonically with education level. The wages of the better educated

<sup>3</sup> The LFS report daily wage only of the employee at the private household, private establishment, government or government corporate and family-owned farm or business of their own household members. The self-employed, who often engage in the informal sector where the mean daily wage level is lower compared to that in the formal sector, may tend to show a particular pattern of personal characteristics. In addition, LFS does not report on remittances. Due to the data constraint, unfortunately, we are unable to capture the effect of self-employment and remittances on income and employment.

cluster at the higher end. For example, university graduates earn 354 PHP a day and those with no elementary education earn less than one-third of that, or 106 PHP a day. Within each education group, the distribution of daily wage is similar (Figure 4). The 90<sup>th</sup> to 10<sup>th</sup> percent ratio is about 4 and Gini coefficient within each group is 0.30 (Table 4). This corroborates with the findings in Hasan and Jandoc (2008) and is consistent with the fact that informal sectors with low paid jobs absorb mainly the less skilled labor and formal sectors with high paid jobs attract the highly skilled and educated in the Philippines (Figure 5). For example, about 45 percent of the least educated (without elementary school degree) are self-employed without paid employees; while the majority of individuals who completed high school or above is employed by a private establishment or government (or government corporation), which often offers better remuneration.

**Figure 4: Distribution of Daily Wage across Individuals with Different Education Attainments**



Source: LFS, 2003-2007

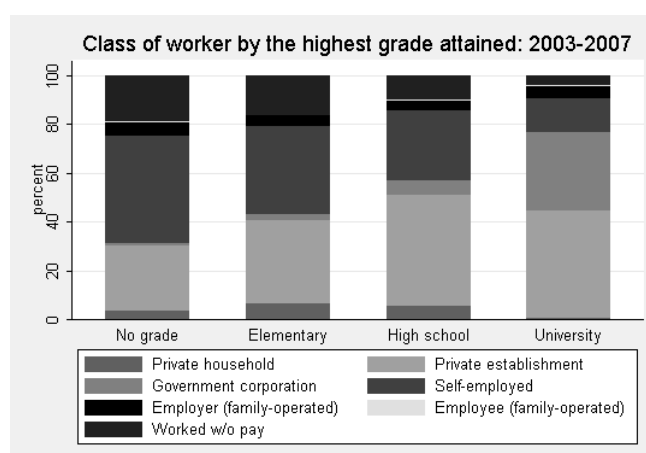
**Table 4: Inequality of Daily Wage distribution by Age Group (2003-2007)**

	<b>P90/P10 ratio</b>	<b>Gini index</b>
No grade	4.0	0.29
Elementary school	4.4	0.30
High school	4.3	0.30
College	3.8	0.29
<b>Philippines, 2003-2007</b>	<b>6.3</b>	<b>0.38</b>

Source: Authors' calculation based on LFS, 2003-2007



**Figure 5: Share of Different Classes of Worker by the Highest Grade Attained (2003-2007)**



Source: LFS, 2003-2007

Over time, the share of labor force with better education increased. However, a decline in wage in real terms for individuals with all levels of education more than compensated the positive effects of improvements in education of the labor force. As a result, real wage declined in average 5 percent in the Philippines in 2003-2007 (Table 5). Participation rate and employment rate of the four education groups declined by almost 2 percent in average; while the decline was larger for the better educated.<sup>4</sup> A virtually unchanged unemployment rate suggests little variation over time in respect to the chances of getting employed for individuals that participate in the labor market. Compounded with a declining wage rate, the labor force faced a tougher market. Over time, with a more rapid decline in employment rate and wage for the workers with university certificate and above, gaps between the better educated and the less educated became smaller. Although this may lower income inequality to some extent in the short run, it may not be encouraging for improving labor market efficiency in the long run.

**Table 5: Average Hours Worked and Hourly Wage**

	Hourly Wage			Normal Working Hours Per Day			Total Working Hours Per Week		
	2003	2007	% Change	2003	2007	% Change	2003	2007	% Change
No grade	15.0	14.1	-5.9***	7.9	7.9	0.4	40.9	40.9	0.1
Elementary school	17.4	16.0	-8.1***	8.1	8.1	-0.1	43.9	43.7	-0.4
High school	22.9	21.6	-5.8***	8.2	8.2	0.0	47.3	47.6	0.6
College	48.4	42.9	-11.3***	8.0	8.0	0.3	43.7	43.9	0.4
<b>Philippines</b>	25.8	24.4	-5.2***	8.1	8.1	0.2	44.9	45.1	0.6

Source: Authors' calculation based on LFS, 2003-2007

The agriculture sector is the major source of employment for the least educated in the Philippines, while the services sector is the major source of employment for the best educated. Patterns of employment slightly differ between the male and female labor force. While the majority of the

<sup>4</sup> In average, Filipino labor force works for 8 hours per day and for 45 hours per week. Workers with high school certificate have the longest working hours per week, while workers with no grade (of which a majority works in agricultural sector) have the shortest.

male labor force that has not completed any degree (54 percent) is employed in the agricultural sector, the majority of female labor with no degree (55 percent) and with an elementary degree (67 percent) is employed in the services sector (Table 6). Forty-five percent of the female labor force with no degree or with an elementary school degree is employed by private households where the daily wage (PHP 129) is far below the average daily wage of an average female worker (PHP 193). More than 80 percent of male labor force who completed college and 90 percent of female labor force work in the services sector. The majority of university graduates have better-paid jobs, working as executives, managers, or professionals.

**Table 6: Industry of Work and Type of Occupation by Highest Degree Completed**

	Male				Female			
	No grade	Elementary School	High School	College	No grade	Elementary School	High School	College
<i>Sector</i>								
Agriculture	54.1	33.6	11.4	2.1	48.3	29.2	9.0	1.2
Manufacturing	24.1	32.8	32.2	17.2	6.8	14.1	24.1	8.8
Services	21.8	33.7	56.5	80.7	55.2	67.3	71.3	90.5
<i>Types of Occupation</i>								
Executives / Managers	0.5	1.0	3.2	16.5	0.3	0.5	2.4	8.7
Professionals	0.3	0.7	4.4	40.3	0.3	0.8	5.8	55.1
Workers / Laborers	99.3	98.4	92.4	43.2	99.4	98.7	91.8	36.2

Source: Authors' calculation based on LFS, 2003-2007

### 3. Estimation and Decomposition Methodology

In this paper, we estimate the effects on wage of personal attributes (i.e. gender, education, and experience), sectors of employment, and occupations, controlling for region-specific and year-specific effects, and employ a regression-based inequality decomposition method to examine their respective contribution to wage differential.

Wage is estimated in a standard form of regression as below. The coefficients are used to calculate the relative significance of human capital endowment measured by the highest degree completed.

$$\begin{aligned}
 \ln(\text{wage}_i) = & a + b_1 \text{experience}_i + b_2 \text{experience}_i^2 + b_3 \text{elementary}_i + b_4 \text{highschool}_i \\
 & + b_5 \text{university}_i + b_6 \text{sex}_i + \sum p_j \text{sector\_dummy}_j \\
 & + \sum q_j \text{occupation\_dummy}_j + \sum r_j \text{region\_dummy}_j + \sum s_t \text{time\_dummy}_t \\
 & + v_i
 \end{aligned}$$

where  $i$  denotes individual,  $\text{wage}_i$  daily wage of individual  $i$ ;  $\text{experience}_i$  the number of years of potential experience;  $\text{experience}_i^2$  the number of years of potential experience squared (1/10,000);  $\text{sex}_i$  a dummy for sex, which equals 1 if female;  $\text{elementary}_i$ , an education dummy, which equals 1 if the individual's highest degree completed is elementary school education;  $\text{highschool}_i$ , which equals 1 if the individual's highest degree completed is high school education;  $\text{university}_i$ , which equals 1 if the individual's highest degree completed is university education; and,  $v$ , an error term.

The number of years of experience is approximated by “experience  $\equiv$  age – years of schooling – 6”, as direct information is not available in LFS.<sup>5</sup> We introduced four different dummies: time dummy (2003 as reference); region dummy (NCR as reference); sector dummy (agricultural sector as reference); and occupation dummy (worker / laborer as reference), to capture time-/region-/sector-/occupation-specific effects. To relax the assumption of homogeneity across regions and across sector, we conduct regression analysis and decompose the wage inequality for each region and each sector separately. Further, to relax the assumptions that each factor plays the same role in wage determination for both genders, we also conduct regressions for male and female separately.<sup>6</sup> As a robustness check, we repeat the regression analysis that replaces dummies for education groups with estimated years of schooling (results are shown in Annex 1). The results are consistent.

The relative importance of each factor to wage differentials, measured by the variance of logarithm of daily wage, is estimated as:

$$s_j = \frac{\text{cov}[a_j Z_j, Y]}{\sigma^2(Y)} = a_j * \sigma(Z_j) * \frac{\text{cor}[Z_j, Y]}{\sigma(Y)}$$

where  $j$  indexes factor included in the model;  $s_j$  denotes the relative contribution of the  $j$ 'th covariates;  $a_j$  the  $j$ 'th element of the estimated coefficient ( $=\alpha, \beta, \rho, \tau, \varphi, \omega$ ) based on the above model;  $Z_j$  the  $j$ 'th element of explaining variables (= potential experience, potential experience squared, potential years of schooling, sex, sector dummies, occupation dummies, region dummies and time dummies) plus a constant; and  $Y$  the daily wage in log. The relative significance of the  $j$ 'th element is the percentage effect of wage inequality that it is accounted for.

We also explore the contribution of each independent variable to the difference in inequality between regions. The contribution of variable  $j$  to the change in an inequality measure,  $I(\cdot)$ , is defined as:

$$\Pi_j(I(\cdot)) \equiv \frac{[s_{j,2}I(\cdot)_2 - s_{j,1}I(\cdot)_1]}{[I(\cdot)_2 - I(\cdot)_1]}$$

where the subscripts 1 and 2 denote region 1 and region 2;  $\Pi_j$  denotes the contribution of the  $j$ 'th factor to the change in inequality measure.<sup>7</sup>

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<sup>5</sup> The LFS does not provide information of the actual years of schooling. Therefore, we assume that in general it takes 6, 10 and 15 years to complete primary, secondary and tertiary school, respectively. Using potential experience rather than actual experience, however, may produce misleading (biased) results. Potential experience may be overestimated, for example, if the individual starts school late, or has extended period of unemployment between jobs. In this case, the estimated coefficient may be biased.

<sup>6</sup> The estimation of for both genders combined may be biased, because a variety of factors may influence the choice of labor market participation of an individual, especially female. Marital status, income level of household members, and the number of children, often affect female worker's participation in the labor market to a larger extent. We may also overestimate the potential experience, more so for female than for male, because female worker tend to leave the market more frequently than male worker for family reasons. This topic is of interest of further research.

<sup>7</sup> This is applicable to any inequality measures that is continuous and symmetric and for which  $I(\mu, \mu, \dots, \mu) = 0$ . Those inequality indexes include Gini index, Atkinson index, the generalized entropy family, etc. For details, see

#### 4. Education and Wage Differentials

Education is the single most important factor that contributes to wage differentials. Table 7 presents the wage equation using dummies of the highest degree completed as measures of education level. The results suggest that all factors carry the expected signs. Other things equal, females earn less than males; experience counts although returns to experience increase at a decreasing rate; education counts and the wage premium for higher education increases with the level of the highest attainment; manufacturing workers earn the highest wage, followed by services workers, while agricultural workers earn the least; occupation counts, officials, managers, executives, and professionals earn more than laborers. Comparing 2007 with 2003, wage premium for secondary and high education increased slightly; while wage gaps across industries declined. Comparing female with male workers, wage premium for secondary and tertiary education is higher for female; while that for primary education is lower, consistent with the findings in many other countries.<sup>8</sup> The wage gap across economic sectors of employment differs significantly between males and females. The daily wage level of males in the services sector is 30 percent higher than those in the agricultural sector, while the wage level of females in the services sector is virtually the same as those in the agricultural sector. The wage gap between executives, professionals and laborers is higher for females than males.

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Fields (2003).

<sup>8</sup> See Psacharopoulos, G. and H.A. Patrinos (2004), and Schady (2000) and (2003).

**Table 7: Wage Equation Results (2003-2007)**

	#1	#2	#3	#4	#5
	(Both sexes)	(Both sexes, 2003)	(Both sexes, 2007)	(All men)	(All women)
<b>Dependent Variable = ln(Daily Wage)</b>					
<b>Personal Attributes</b>					
Gender	-0.25 (0.003)***	-0.26 (0.006)***	-0.27 (0.007)***		
Experience	0.03 (0.000)***	0.03 (0.001)***	0.03 (0.001)***	0.03 (0.000)***	0.03 (0.001)***
exp * exp (/10,000)	-0.04 (0.001)***	-0.04 (0.001)***	-0.04 (0.002)***	-0.04 (0.001)***	-0.04 (0.001)***
<b>Education Dummies</b>					
<i>Elementary</i>	0.11 (0.004)***	0.10 (0.008)***	0.09 (0.010)***	0.13 (0.005)***	0.07 (0.009)***
<i>High School</i>	0.40 (0.005)***	0.37 (0.009)***	0.40 (0.011)***	0.37 (0.005)***	0.46 (0.010)***
<i>College</i>	1.01 (0.006)***	0.94 (0.013)***	1.02 (0.014)***	0.86 (0.008)***	1.14 (0.010)***
<b>Sector (Agricultural as reference)</b>					
Manufacturing	0.38 (0.004)***	0.42 (0.007)***	0.37 (0.008)***	0.41 (0.004)***	0.31 (0.009)***
Services	0.17 (0.004)***	0.24 (0.007)***	0.16 (0.009)***	0.30 (0.005)***	0.01 (0.007)
<b>Occupation (Worker/laborer as reference)</b>					
Officials, managers, executives	0.50 (0.008)***	0.52 (0.017)***	0.45 (0.018)***	0.44 (0.010)***	0.58 (0.012)***
Professionals	0.42 (0.005)***	0.47 (0.010)***	0.36 (0.011)***	0.33 (0.007)***	0.45 (0.007)***
<b>Region dummies (NCR as reference)</b>					
Luzon	-0.199 (0.004)***	-0.165 (0.008)***	-0.218 (0.008)***	-0.182 (0.004)***	-0.211 (0.006)***
Visayas	-0.413 (0.004)***	-0.362 (0.009)***	-0.45 (0.010)***	-0.397 (0.005)***	-0.422 (0.007)***
Mindanao	-0.38 (0.004)***	-0.324 (0.009)***	-0.427 (0.010)***	-0.359 (0.005)***	-0.387 (0.007)***
<b>Year dummies (2003 as reference)</b>					
2004	-0.016 (0.004)***			-0.026 (0.004)***	-0.005 (0.006)
2005	-0.073 (0.004)***			-0.056 (0.005)***	-0.097 (0.007)***
2006	-0.092 (0.004)***			-0.081 (0.005)***	-0.11 (0.007)***
2007	-0.069 (0.004)***			-0.06 (0.005)***	-0.087 (0.006)***
Constant	4.40 (0.007)***	4.35 (0.013)***	4.39 (0.015)***	4.32 (0.008)***	4.26 (0.012)***
Number of observations	156167	34380	30806	93242	64289
Adjusted R-squared	0.55	0.56	0.53	0.52	0.58

*Note:* Robust standard errors in parentheses. \* significant at 10 percent; \*\* significant at 5 percent; \*\*\* significant at 1 percent.

Wage differences across regions suggest some segmentation in the labor market. Individuals

employed in NCR earn the highest wage followed by those in Luzon. For example, in average, wage in Visayas is 40 percent lower than that in NCR, others being equal. Over time, wage gaps widened. The large wage gap may be related to the unique production structure of the primary city NCR where high-paid jobs in high-value-added services industries agglomerate.<sup>9</sup>

Table 8 shows relative contribution of personal attributes, sectoral and occupational factors to wage differentials, while regional and year effects are controlled for. For both genders, personal attributes account for approximately one-third of wage inequality, of which education accounts for 30 percent. Occupation accounts for 12 percent of wage differentials.<sup>10</sup> Personal attributes, in particular education level, play a more important role in wage differentials for female workers than for male workers. Interestingly, the sector of employment plays a more important role for male workers than for female workers, while the type of occupation plays a more important role for female workers than for male workers. This is likely related to the wide spectrum of jobs that female workers have within a sector (especially the services sector). Comparing the results in 2003 and 2007, the contribution of personal attributes, including education level, is stable over time; while the contribution of sector and occupation slightly declines and that of region increases. This is consistent with the findings of the slightly declining wage inequality within sectors and the widening gap between the NCR and other regions.

**Table 8: Contribution of Each Explanatory Factor to Wage Differentials (2003-2007)**

	#1 (Both sexes)	#2 (Both sexes, 2003)	#3 (Both sexes, 2007)	#4 (All men)	#5 (All women)
<b>Residual</b>	<b>45.7</b>	<b>44.0</b>	<b>47.2</b>	<b>47.7</b>	<b>42.0</b>
<b>Personal Attributes</b>	<b>32.0</b>	<b>30.4</b>	<b>31.9</b>	<b>25.8</b>	<b>37.2</b>
<i>Gender</i>	<i>1.3</i>	<i>1.2</i>	<i>1.4</i>	--	--
<i>Experience</i>	<i>1.6</i>	<i>1.4</i>	<i>1.4</i>	<i>2.3</i>	<i>0.7</i>
<i>Dummies for Highest Degree Completed</i>	<i>29.1</i>	<i>27.9</i>	<i>29.0</i>	<i>23.5</i>	<i>36.5</i>
<b>Sector</b>	<b>4.6</b>	<b>6.3</b>	<b>4.1</b>	<b>10.1</b>	<b>1.2</b>
<b>Occupation</b>	<b>11.6</b>	<b>14.3</b>	<b>9.8</b>	<b>8.8</b>	<b>14.8</b>
<b>Region</b>	<b>5.9</b>	<b>5.1</b>	<b>7.1</b>	<b>7.5</b>	<b>4.6</b>
<b>Year</b>	<b>0.2</b>	--	--	<b>0.1</b>	<b>0.3</b>

<sup>9</sup> The services sector in NCR employs 78 percent of labor force, accounts for approximately 68 percent of regional GDP.

<sup>10</sup> As occupation is closely associated with education, the total contribution of education to wage differential could be even higher than 30 percent, as part of it is captured by occupation.

We experiment with similar regressions at the regional and sectoral level. Results are presented in Annex 2. The findings indicate that impacts of personal attributes and occupation differ significantly across regions and genders. The wage gap between sexes is largest in Visayas (30 percent), while smallest in NCR (24 percent). Wage premium for tertiary education is slightly higher in Mindanao for all workers. Wage gap between professional workers and unskilled workers is the smallest in NCR, while the largest in Visayas.

Within a region, wages vary widely across sectors. For example, in Luzon, those who are employed in the manufacturing sector and services sector earn 46 percent and 24 percent higher daily wage than those in the agricultural sector; while in NCR, the wage gap is 24 percent and 7 percent, respectively. This is consistent with the difference in production structure within each economic sector across regions. Wage gap between agricultural and manufacturing workers of both genders is the largest in Luzon, while the smallest in Mindanao. Especially in NCR and Mindanao, female workers in the services sector earn less than those in the agricultural sector.

Within each region, education is commonly the single most important factor that contributes to wage differentials – it accounts for 28 percent of wage inequality of all workers in NCR, 27 percent in Luzon, 36 percent in Visayas and 34 percent in Mindanao. The role of educational is less significant for male workers in all regions. Occupation is the second most important factor – it accounts for 11-14 percent of wage inequality in each region. The role of sector is limited, especially in NCR and Mindanao where the economy is dominated by a single sector (services in NCR and agricultural in Mindanao).

Within each sector, education is also the single most important factor that contributes to wage differentials. It accounts for 6 percent, 14 percent and 33 percent of wage inequality in the agricultural, manufacturing and services sectors, respectively. Wage premium for secondary and tertiary education differ significantly across sectors. Having better education, such as high school and college degree, is most rewarding in the services sector. For both genders, holding a high school diploma is associated with a 52 percent increase in daily wage and holding a college degree 120 percent compared with those who are without grade.

Wage inequality across regions is closely associated with the difference in their human capital. Education is the most important factor that explains the difference in inequality between NCR and Visayas and between NCR and Mindanao; while the difference in inequality between NCR and Luzon, where human capital is similar, mainly stem from their production structures, i.e., the share of manufacturing and services sectors. Results in Annex 3 present the relative contribution of each factor to inequality of daily wage measured by Gini and Theil indexes between NCR and other three regions based on the regression results. Education accounts for 44 percent of the difference in Gini index and 38 percent of Theil index between NCR and Visayas. Similarly, it accounts for 58 percent of Gini index and 48 percent of Theil index between NCR and Mindanao.

## 5. Conclusions

Education plays an important role in wage differentials in the Philippines. A large part of inequality stems from the difference in wages between the less educated and the better educated. At the national level, education accounts for about 30 percent of the difference in wages. It accounts for a higher percentage of the difference between female workers than between male workers. Across regions, education accounts for 20-30 percent of the difference in wages between NCR and Visayas and between NCR and Mindanao; across sectors, it accounts for 6 percent, 14 percent, and 33 percent of the difference in wages in the agricultural, manufacturing, and services sectors, respectively.

Returns to education increase with years of schooling – workers with elementary, secondary, and tertiary education earn 10 percent, 40 percent, and 100 percent, respectively, more than those with no education. Tertiary education is often a prerequisite for high-paid jobs. The majority of the least educated clustered in low-paid services jobs and in the agricultural sector.

Efforts to improve education to increase the supply of highly educated people are important for economic efficiency enhancement and growth acceleration. They are important not only for long-term growth, but also for helping to translate growth into more equal opportunities for the children of the current generation.

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## Annex 1. Regression Results Using Estimated Years of Schooling

As a robustness check, we replace dummies for the highest degree completed with estimated years of education. The model is rewritten as:

$$\begin{aligned} \ln(\text{wage}_i) = & \alpha + \beta_1 \text{experience}_i + \beta_2 \text{experience}_i^2 + \beta_3 \text{schooling}_i + \beta_4 \text{sex}_i \\ & + \sum \rho_j \text{sector\_dummy}_j + \sum \tau_j \text{occupation\_dummy}_j + \sum \varphi_j \text{region\_dummy}_j \\ & + \sum \omega_t \text{time\_dummy}_t + \epsilon_i \end{aligned}$$

where schooling<sub>i</sub> stands for the potential years of completed schooling; sex<sub>i</sub> a dummy for sex (= 1 if female); and  $\epsilon_i$  an error term.

Tables A1-6 present the results.

**Table A 1: Wage Equation Results, Using Years of Potential Schooling 2003-2007**

	#1	#2	#3	#4	#5
	(Both sexes)	(Both sexes, 2003)	(Both sexes, 2007)	(All men)	(All women)
Dependent Variable = ln(Daily Wage)					
<b>Personal Attributes</b>					
Gender	-0.25 (0.003)***	-0.25 (0.006)***	-0.26 (0.007)***	-- --	-- --
Experience	0.02 (0.000)***	0.02 (0.001)***	0.02 (0.001)***	0.03 (0.000)***	0.02 (0.001)***
exp * exp (/10,000)	-0.03 (0.001)***	-0.03 (0.002)***	-0.03 (0.002)***	-0.04 (0.001)***	-0.02 (0.001)***
Years of completed schooling	0.07 (0.000)***	0.06 (0.001)***	0.07 (0.001)***	0.05 (0.000)***	0.09 (0.001)***
<b>Sector (Agricultural as reference)</b>					
Manufacturing	0.34 (0.004)***	0.39 (0.007)***	0.33 (0.009)***	0.39 (0.004)***	0.24 (0.009)***
Services	0.15 (0.004)***	0.22 (0.008)***	0.14 (0.009)***	0.30 (0.005)***	-0.03 (0.007)***
<b>Occupation (Worker/laborer as reference)</b>					
Officials, managers, executives	0.62 (0.008)***	0.63 (0.017)***	0.57 (0.018)***	0.54 (0.010)***	0.69 (0.012)***
Professionals	0.59 (0.005)***	0.63 (0.010)***	0.52 (0.011)***	0.46 (0.007)***	0.59 (0.007)***
<b>Region dummies</b>					
yes	yes	yes	yes	yes	yes
<b>Year dummies</b>					
yes	yes	--	--	yes	yes
Constant	4.22 (0.007)***	4.19 (0.013)***	4.18 (0.015)***	4.21 (0.008)***	3.95 (0.012)***
Number of observations	156167	34380	30806	93242	64289
Adjusted R-squared	0.52	0.54	0.50	0.51	0.55

*Note:* Robust standard errors in parentheses. \* significant at 10 percent; \*\* significant at 5 percent; \*\*\* significant at 1 percent.

**Table A2: Contribution of Each Explanatory Factor to Wage Differentials, Using Years of Potential Schooling 2003-2007**

	#1 (Both sexes)	#2 (Both sexes, 2003)	#3 (Both sexes, 2007)	#4 (All men)	#5 (All women)
<b>Residual</b>	<b>48.3</b>	<b>46.4</b>	<b>50.0</b>	<b>49.4</b>	<b>44.7</b>
<b>Personal Attributes</b>	<b>26.1</b>	<b>24.2</b>	<b>26.0</b>	<b>21.7</b>	<b>30.8</b>
<i>Gender</i>	<i>1.3</i>	<i>1.1</i>	<i>1.4</i>	--	--
<i>Experience</i>	<i>1.2</i>	<i>1.0</i>	<i>1.1</i>	<i>2.2</i>	<i>0.0</i>
<i>Years of completed schooling</i>	<i>23.6</i>	<i>22.1</i>	<i>23.5</i>	<i>19.5</i>	<i>30.8</i>
<b>Sector</b>	<b>4.2</b>	<b>5.8</b>	<b>3.6</b>	<b>9.9</b>	<b>0.8</b>
<b>Occupation</b>	<b>15.7</b>	<b>18.7</b>	<b>13.6</b>	<b>11.7</b>	<b>19.1</b>
<b>Region</b>	<b>5.6</b>	<b>4.8</b>	<b>6.7</b>	<b>7.1</b>	<b>4.3</b>
<b>Year</b>	<b>0.2</b>			<b>0.1</b>	<b>0.3</b>

**Table A3: Equation Results, Using Years of Potential Schooling by Region 2003-2007**

	NCR			Luzon			Visayas			Mindanao		
	(Both sexes)	(All men)	(All women)	(Both sexes)	(All men)	(All women)	(Both sexes)	(All men)	(All women)	(Both sexes)	(All men)	(All women)
Dependent Variable = ln(Daily Wage)												
<b>Personal Attributes</b>												
Gender	-0.24 (0.006)***	-- (0.006)***	-- (0.006)***	-0.26 (0.004)***	-- (0.004)***	-- (0.004)***	-0.29 (0.007)***	-- (0.007)***	-- (0.007)***	-0.26 (0.006)***	-- (0.006)***	-- (0.006)***
Experience	0.02 (0.001)***	0.02 (0.001)***	0.02 (0.001)***	0.02 (0.001)***	0.03 (0.001)***	0.02 (0.001)***	0.03 (0.001)***	0.03 (0.001)***	0.02 (0.001)***	0.03 (0.001)***	0.04 (0.001)***	0.03 (0.001)***
exp * exp (/10,000)	-0.02 (0.002)***	-0.02 (0.003)***	-0.02 (0.003)***	-0.03 (0.001)***	-0.04 (0.001)***	-0.02 (0.002)***	-0.04 (0.002)***	-0.04 (0.002)***	-0.02 (0.003)***	-0.05 (0.002)***	-0.05 (0.002)***	-0.04 (0.003)***
Years of completed schooling	0.08 (0.001)***	0.06 (0.002)***	0.10 (0.002)***	0.06 (0.001)***	0.05 (0.001)***	0.08 (0.001)***	0.07 (0.001)***	0.05 (0.001)***	0.08 (0.002)***	0.07 (0.001)***	0.06 (0.001)***	0.09 (0.001)***
<b>Sector</b>												
Manufacturing	0.18 (0.055)***	0.23 (0.056)***	-0.03 (0.173)	0.43 (0.005)***	0.47 (0.005)***	0.32 (0.012)***	0.36 (0.009)***	0.39 (0.009)***	0.31 (0.023)***	0.20 (0.007)***	0.24 (0.007)***	0.11 (0.021)***
Services	0.03 (0.055)	0.16 (0.056)***	-0.26 (0.173)	0.24 (0.006)***	0.37 (0.007)***	0.05 (0.010)***	0.15 (0.009)***	0.28 (0.011)***	-0.01 (0.017)	0.07 (0.007)***	0.20 (0.009)***	-0.15 (0.014)***
<b>Occupation</b>												
Officials, managers, executives	0.52 (0.014)***	0.46 (0.019)***	0.59 (0.020)***	0.64 (0.013)***	0.58 (0.017)***	0.72 (0.020)***	0.68 (0.023)***	0.60 (0.028)***	0.80 (0.038)***	0.58 (0.020)***	0.52 (0.025)***	0.70 (0.033)***
Professionals	0.37 (0.010)***	0.35 (0.013)***	0.38 (0.014)***	0.58 (0.007)***	0.48 (0.010)***	0.59 (0.010)***	0.73 (0.012)***	0.56 (0.018)***	0.77 (0.017)***	0.64 (0.010)***	0.48 (0.015)***	0.69 (0.014)***
<b>Year dummies</b>	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Constant	4.29 (0.057)***	4.42 (0.059)***	4.09 (0.174)***	4.01 (0.009)***	4.04 (0.010)***	3.73 (0.016)***	3.78 (0.013)***	3.74 (0.016)***	3.56 (0.024)***	3.81 (0.011)***	3.82 (0.014)***	3.62 (0.021)***
No. of observations	25528	13810	11718	67155	39832	27323	28534	16755	11779	36314	22845	13469
Adj. R <sup>2</sup>	0.42	0.34	0.47	0.47	0.46	0.51	0.50	0.46	0.56	0.51	0.46	0.59

*Note:* Robust standard errors in parentheses. \* significant at 10 percent; \*\* significant at 5 percent; \*\*\* significant at 1 percent.

**Table A4: Contribution of Each Explanatory Factor to Wage Differentials, Using Potential Years of Schooling by Region 2003-2007**

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
	(Both	NCR	(All	(Both	Luzon	(All	(Both	Visayas	(All	(Both	Mindanao	(All
	sexes)	(All men)	women)	sexes)	(All men)	women)	sexes)	(All men)	women)	sexes)	(All men)	women)
<b>Residual</b>	<b>58.1</b>	<b>66.0</b>	<b>52.6</b>	<b>52.7</b>	<b>54.2</b>	<b>48.8</b>	<b>49.9</b>	<b>54.1</b>	<b>44.1</b>	<b>48.8</b>	<b>54.1</b>	<b>40.5</b>
<b>Personal Attributes</b>	<b>27.7</b>	<b>20.0</b>	<b>32.0</b>	<b>23.5</b>	<b>19.0</b>	<b>28.9</b>	<b>27.0</b>	<b>23.9</b>	<b>30.1</b>	<b>31.3</b>	<b>27.7</b>	<b>36.0</b>
<i>Gender</i>	3.2	--	--	1.5	--	--	1.4	--	--	0.9	--	--
<i>Experience</i>	1.0	1.5	0.1	1.3	3.2	-0.5	1.9	3.4	0.3	3.9	4.2	2.8
<i>Years of completed schooling</i>	23.5	18.4	31.9	20.7	15.8	29.3	23.7	20.5	29.9	26.6	23.5	33.1
<b>Sector</b>	<b>0.5</b>	<b>-0.3</b>	<b>1.1</b>	<b>6.5</b>	<b>13.9</b>	<b>1.3</b>	<b>4.1</b>	<b>9.8</b>	<b>0.7</b>	<b>1.6</b>	<b>6.3</b>	<b>-0.9</b>
<b>Occupation</b>	<b>13.6</b>	<b>14.2</b>	<b>14.2</b>	<b>17.1</b>	<b>12.7</b>	<b>20.9</b>	<b>18.6</b>	<b>12.0</b>	<b>24.3</b>	<b>17.8</b>	<b>11.7</b>	<b>23.3</b>
<b>Year</b>	<b>0.1</b>	<b>0.2</b>	<b>0.1</b>	<b>0.1</b>	<b>0.2</b>	<b>0.1</b>	<b>0.4</b>	<b>0.1</b>	<b>0.8</b>	<b>0.4</b>	<b>0.1</b>	<b>1.1</b>

**Table A5: Contribution of Each Explanatory Factor to the Difference in Inequality Index (Gini Index)**

	Both Sexes				All Men				All Women			
	NCR	Luzon	Visayas	Mindanao	NCR	Luzon	Visayas	Mindanao	NCR	Luzon	Visayas	Mindanao
Gini Index	0.31	0.35	0.40	0.39	0.27	0.32	0.36	0.36	0.36	0.39	0.46	0.44
<b>Residual</b>		<b>0.12</b>	<b>0.23</b>	<b>0.14</b>		<b>-0.07</b>	<b>-0.08</b>	<b>-0.08</b>		<b>0.08</b>	<b>-0.46</b>	<b>-0.87</b>
<b>Personal Attributes</b>		<b>-0.08</b>	<b>0.25</b>	<b>0.45</b>		<b>0.14</b>	<b>0.45</b>	<b>0.68</b>		<b>-0.04</b>	<b>0.11</b>	<b>0.78</b>
<i>Gender</i>		-0.11	-0.04	-0.08		--	--	--		--	--	--
<i>Experience</i>		0.04	0.05	0.14		0.12	0.13	0.18		-0.07	0.02	0.31
<i>Years of completed schooling</i>		0.00	0.24	0.38		0.02	0.32	0.50		0.03	0.09	0.47
<b>Sector</b>		<b>0.52</b>	<b>0.16</b>	<b>0.06</b>		<b>0.88</b>	<b>0.62</b>	<b>0.40</b>		<b>0.03</b>	<b>-0.04</b>	<b>-0.23</b>
<b>Occupation</b>		<b>0.43</b>	<b>0.35</b>	<b>0.33</b>		<b>0.05</b>	<b>0.01</b>	<b>-0.01</b>		<b>0.92</b>	<b>1.31</b>	<b>1.20</b>
<b>Year</b>		<b>0.01</b>	<b>0.01</b>	<b>0.02</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		<b>0.00</b>	<b>0.09</b>	<b>0.12</b>

**Table A6: Contribution of Each Explanatory Factor to the Difference in Inequality Index (Theil Index)**

	Both Sexes				All Men				All Women			
	NCR	Luzon	Visayas	Mindanao	NCR	Luzon	Visayas	Mindanao	NCR	Luzon	Visayas	Mindanao
Theil index	0.18	0.21	0.29	0.27	0.15	0.19	0.24	0.24	0.23	0.26	0.35	0.32
<b>Residual</b>		<b>0.20</b>	<b>0.35</b>	<b>0.29</b>		<b>0.05</b>	<b>0.04</b>	<b>0.04</b>		<b>0.18</b>	<b>-0.23</b>	<b>-0.54</b>
<b>Personal Attributes</b>		<b>-0.02</b>	<b>0.26</b>	<b>0.39</b>		<b>0.15</b>	<b>0.41</b>	<b>0.60</b>		<b>0.05</b>	<b>0.16</b>	<b>0.67</b>
<i>Gender</i>		-0.09	-0.02	-0.04		--	--	--		--	--	--
<i>Experience</i>		0.03	0.03	0.10		0.10	0.11	0.15		-0.05	0.01	0.24
<i>Years of completed schooling</i>		0.04	0.24	0.33		0.05	0.29	0.45		0.10	0.14	0.43
<b>Sector</b>		<b>0.43</b>	<b>0.10</b>	<b>0.04</b>		<b>0.73</b>	<b>0.52</b>	<b>0.34</b>		<b>0.03</b>	<b>-0.03</b>	<b>-0.17</b>
<b>Occupation</b>		<b>0.38</b>	<b>0.28</b>	<b>0.27</b>		<b>0.06</b>	<b>0.03</b>	<b>0.02</b>		<b>0.74</b>	<b>1.04</b>	<b>0.95</b>
<b>Year</b>		<b>0.01</b>	<b>0.01</b>	<b>0.01</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		<b>0.00</b>	<b>0.07</b>	<b>0.09</b>

## Annex 2: Estimations at the Regional and Sectoral Levels

**Table A7: Equation Results, Using Dummies for the Highest Degree Completed by Region 2003-2007**

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
	(Both sexes)	NCR (All men)	(All women)	(Both sexes)	Luzon (All men)	(All women)	(Both sexes)	Visayas (All men)	(All women)	(Both sexes)	Mindanao (All men)	(All women)
Dependent Variable = ln(Daily Wage)												
<b>Personal Attributes</b>												
Gender	-0.243 (0.006)***	-- --	-- --	-0.266 (0.004)***	-- --	-- --	-0.295 (0.007)***	-- --	-- --	-0.267 (0.006)***		
Experience	0.022 (0.001)***	0.022 (0.001)***	0.021 (0.001)***	0.026 (0.001)***	0.029 (0.001)***	0.022 (0.001)***	0.031 (0.001)***	0.035 (0.001)***	0.027 (0.001)***	0.035 (0.001)***	0.035 (0.001)***	0.032 (0.001)***
exp * exp (/10,000)	-0.032 (0.002)***	-0.03 (0.003)***	-0.031 (0.003)***	-0.038 (0.001)***	-0.042 (0.001)***	-0.033 (0.002)***	-0.043 (0.002)***	-0.046 (0.002)***	-0.039 (0.003)***	-0.05 (0.002)***	-0.049 (0.002)***	-0.049 (0.003)***
Dummies for education												
<i>Elementary school</i>	0.079 (0.020)***	0.1 (0.023)***	0.068 (0.035)*	0.071 (0.007)***	0.088 (0.008)***	0.05 (0.014)***	0.131 (0.009)***	0.175 (0.010)***	0.051 (0.017)***	0.156 (0.008)***	0.173 (0.008)***	0.124 (0.017)***
<i>High school</i>	0.39 (0.020)***	0.317 (0.023)***	0.48 (0.035)***	0.347 (0.007)***	0.304 (0.008)***	0.407 (0.015)***	0.434 (0.010)***	0.417 (0.012)***	0.42 (0.019)***	0.472 (0.009)***	0.45 (0.010)***	0.483 (0.019)***
<i>University</i>	0.954 (0.021)***	0.759 (0.026)***	1.139 (0.035)***	0.917 (0.010)***	0.772 (0.012)***	1.049 (0.017)***	1.103 (0.014)***	0.959 (0.019)***	1.179 (0.023)***	1.124 (0.012)***	0.985 (0.015)***	1.24 (0.020)***
<b>Sector</b>												
Manufacturing	0.235 (0.053)***	0.261 (0.055)***	0.06 (0.176)	0.457 (0.005)***	0.482 (0.005)***	0.368 (0.012)***	0.41 (0.008)***	0.414 (0.009)***	0.401 (0.022)***	0.234 (0.007)***	0.257 (0.007)***	0.167 (0.021)***
Services	0.071 -0.053	0.183 (0.055)***	-0.193 (0.175)	0.244 (0.005)***	0.363 (0.007)***	0.065 (0.009)***	0.167 (0.009)***	0.278 (0.011)***	0.04 (0.015)***	0.067 (0.007)***	0.187 (0.009)***	-0.123 (0.013)***
<b>Occupation</b>												
Officials, managers, executives	0.447 (0.014)***	0.401 (0.019)***	0.519 (0.020)***	0.524 (0.013)***	0.478 (0.017)***	0.611 (0.020)***	0.522 (0.023)***	0.478 (0.029)***	0.627 (0.038)***	0.454 (0.020)***	0.43 (0.024)***	0.545 (0.033)***
Professionals	0.292 (0.010)***	0.279 (0.014)***	0.296 (0.014)***	0.42 (0.008)***	0.344 (0.011)***	0.455 (0.010)***	0.516 (0.014)***	0.398 (0.020)***	0.559 (0.019)***	0.458 (0.011)***	0.331 (0.016)***	0.524 (0.015)***
<b>Year dummies</b>												
	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Constant	4.594 (0.056)***	4.607 (0.059)***	4.489 (0.178)***	4.216 (0.009)***	4.172 (0.010)***	4.054 (0.017)***	3.914 (0.013)***	3.813 (0.015)***	3.802 (0.024)***	3.978 (0.011)***	3.914 (0.013)***	3.911 (0.021)***
Number of observations	25528	13810	11718	67296	39885	27411	28652	16840	11812	36629	23031	13598
Adjusted R-squared	0.44	0.36	0.49	0.5	0.48	0.54	0.53	0.48	0.6	0.54	0.48	0.62

*Note:* Robust standard errors in parentheses. \* significant at 10 percent; \*\* significant at 5 percent; \*\*\* significant at 1 percent.

**Table A8: Contribution of Each Explanatory Factor to Wage Differentials, Using Dummies for the Highest Degree Completed by Region 2003-2007**

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
	(Both	NCR	(All	(Both	Luzon	(All	(Both	Visayas	(All	(Both	Mindanao	(All
	sexes)	(All men)	women)	sexes)	(All men)	women)	sexes)	(All men)	women)	sexes)	(All men)	women)
<b>Residual</b>	<b>56.0</b>	<b>64.2</b>	<b>50.7</b>	<b>50.0</b>	<b>52.2</b>	<b>46.1</b>	<b>46.7</b>	<b>51.9</b>	<b>40.3</b>	<b>46.0</b>	<b>51.9</b>	<b>37.9</b>
<b>Personal Attributes</b>	<b>32.1</b>	<b>24.0</b>	<b>36.3</b>	<b>30.3</b>	<b>23.9</b>	<b>35.8</b>	<b>34.8</b>	<b>28.9</b>	<b>39.8</b>	<b>38.9</b>	<b>33.3</b>	<b>44.2</b>
<i>Gender</i>	<i>3.2</i>	<i>--</i>	<i>--</i>	<i>1.6</i>			<i>1.4</i>			<i>0.9</i>		
<i>Experience</i>	<i>1.3</i>	<i>1.7</i>	<i>0.5</i>	<i>1.7</i>	<i>3.3</i>	<i>0.2</i>	<i>2.1</i>	<i>3.4</i>	<i>1.1</i>	<i>3.9</i>	<i>4.2</i>	<i>3.3</i>
<i>Highest Degree Completed</i>	<i>27.6</i>	<i>22.4</i>	<i>35.7</i>	<i>27.0</i>	<i>20.6</i>	<i>35.5</i>	<i>31.3</i>	<i>25.4</i>	<i>38.7</i>	<i>34.1</i>	<i>29.1</i>	<i>40.9</i>
<b>Sector</b>	<b>0.6</b>	<b>-0.3</b>	<b>1.2</b>	<b>6.8</b>	<b>14.0</b>	<b>1.6</b>	<b>4.7</b>	<b>10.2</b>	<b>1.2</b>	<b>1.8</b>	<b>6.0</b>	<b>-0.7</b>
<b>Occupation</b>	<b>11.1</b>	<b>11.8</b>	<b>11.8</b>	<b>12.8</b>	<b>9.6</b>	<b>16.4</b>	<b>13.5</b>	<b>9.0</b>	<b>17.8</b>	<b>12.8</b>	<b>8.6</b>	<b>17.6</b>
<b>Year</b>	<b>0.1</b>	<b>0.2</b>	<b>0.1</b>	<b>0.1</b>	<b>0.2</b>	<b>0.1</b>	<b>0.4</b>	<b>0.1</b>	<b>0.9</b>	<b>0.4</b>	<b>0.1</b>	<b>1.1</b>



### Annex 3: Contributions to Wage Differentials

**Table A 9: Equation Results, Using Dummies for the Highest Degree Completed by Sector 2003-2007**

	#1	#2	#3	#4	#5	#6	#7	#8	#9
	Agriculture			Manufacturing			Services		
	(Both sexes)	(All men)	(All women)	(Both sexes)	(All men)	(All women)	(Both sexes)	(All men)	(All women)
Dependent Variable = ln(Daily Wage)									
<b>Personal Attributes</b>									
Gender	-0.17 (0.006)***			-0.165 (0.006)***			-0.286 (0.004)***		
Experience	0.015 (0.001)***	0.017 (0.001)***	0.007 (0.001)***	0.018 (0.001)***	0.023 (0.001)***	0.014 (0.002)***	0.032 (0.001)***	0.036 (0.001)***	0.027 (0.001)***
exp * exp (/10,000)	-0.022 (0.001)***	-0.024 (0.001)***	-0.011 (0.002)***	-0.023 (0.001)***	-0.029 (0.001)***	-0.033 (0.004)***	-0.046 (0.001)***	-0.052 (0.002)***	-0.039 (0.002)***
Dummies for education									
<i>Elementary school</i>	0.109 (0.006)***	0.117 (0.006)***	0.086 (0.012)***	0.083 (0.008)***	0.108 (0.008)***	0.063 (0.037)*	0.131 (0.009)***	0.204 (0.015)***	0.082 (0.012)***
<i>High school</i>	0.219 (0.007)***	0.223 (0.008)***	0.202 (0.017)***	0.29 (0.008)***	0.27 (0.008)***	0.437 (0.036)***	0.522 (0.009)***	0.569 (0.014)***	0.464 (0.012)***
<i>University</i>	0.578 (0.029)***	0.479 (0.032)***	0.748 (0.055)***	0.645 (0.012)***	0.618 (0.014)***	0.764 (0.038)***	1.175 (0.010)***	1.093 (0.015)***	1.217 (0.013)***
<b>Occupation</b>									
Officials, managers, executives	0.862 (0.043)***	0.887 (0.045)***	0.785 (0.147)***	0.508 (0.013)***	0.513 (0.016)***	0.509 (0.024)***	0.482 (0.010)***	0.408 (0.014)***	0.584 (0.014)***
Professionals	0.724 (0.043)***	0.78 (0.049)***	0.604 (0.084)***	0.412 (0.012)***	0.45 (0.017)***	0.349 (0.017)***	0.388 (0.006)***	0.296 (0.008)***	0.428 (0.008)***
<b>Region</b>									
Luzon	-0.444 (0.053)***	-0.414 (0.055)***	-0.568 (0.177)***	-0.174 (0.005)***	-0.16 (0.006)***	-0.226 (0.012)***	-0.201 (0.005)***	-0.191 (0.007)***	-0.218 (0.007)***
Visayas	-0.647 (0.054)***	-0.609 (0.055)***	-0.8 (0.177)***	-0.396 (0.007)***	-0.394 (0.007)***	-0.425 (0.018)***	-0.408 (0.006)***	-0.39 (0.009)***	-0.426 (0.008)***
Mindanao	-0.516 (0.053)***	-0.493 (0.055)***	-0.617 (0.177)***	-0.43 (0.007)***	-0.432 (0.007)***	-0.438 (0.019)***	-0.396 (0.006)***	-0.389 (0.008)***	-0.406 (0.008)***
<b>Year dummies</b>									
	yes	yes	yes	yes	yes	yes	yes	yes	yes
Constant	(0.007)*** 4.756	(0.008)*** 4.7	(0.014)*** 4.838	(0.006)*** 4.945	(0.007)*** 4.866	(0.015)*** 4.809	(0.006)*** 4.449	(0.008)*** 4.394	(0.008)*** 4.222
Number of observations	(0.055)***	(0.056)***	(0.178)***	(0.012)***	(0.012)***	(0.041)***	(0.011)***	(0.017)***	(0.014)***
Adjusted R-squared	29668	23348	6320	41236	31569	9667	85837	37391	48446

**Note:** Robust standard errors in parentheses. \* significant at 10 percent; \*\* significant at 5 percent; \*\*\* significant at 1 percent.

**Table A 10: Contribution of Each Explanatory Factor to Wage Differentials, Using Dummies for the Highest Degree Completed by Sector 2003-2007**

	#1 (Both sexes)	#2 Agriculture (All men)	#3 (All women)	#4 (Both sexes)	#5 Manufacturing (All men)	#6 (All women)	#7 (Both sexes)	#8 Services (All men)	#9 (All women)
<b>Residual</b>	<b>80.4</b>	<b>82.6</b>	<b>77.0</b>	<b>63.8</b>	<b>59.2</b>	<b>65.9</b>	<b>43.7</b>	<b>52.3</b>	<b>39.5</b>
<b>Personal Attributes</b>	<b>9.3</b>	<b>7.1</b>	<b>11.2</b>	<b>15.8</b>	<b>16.6</b>	<b>18.2</b>	<b>39.3</b>	<b>32.3</b>	<b>41.3</b>
<i>Gender</i>	<i>2.1</i>	<i>--</i>	<i>--</i>	<i>0.8</i>	<i>--</i>	<i>--</i>	<i>2.9</i>	<i>--</i>	<i>--</i>
<i>Experience</i>	<i>0.9</i>	<i>1.9</i>	<i>-0.2</i>	<i>0.9</i>	<i>2.9</i>	<i>0.7</i>	<i>3.1</i>	<i>4.4</i>	<i>2.1</i>
<i>Highest Degree Completed</i>	<i>6.2</i>	<i>5.2</i>	<i>11.4</i>	<i>14.1</i>	<i>13.7</i>	<i>17.6</i>	<i>33.2</i>	<i>27.9</i>	<i>39.2</i>
<b>Region</b>	<b>4.4</b>	<b>4.1</b>	<b>6.1</b>	<b>9.8</b>	<b>12.1</b>	<b>7.0</b>	<b>4.4</b>	<b>5.6</b>	<b>3.8</b>
<b>Occupation</b>	<b>5.7</b>	<b>6.0</b>	<b>5.0</b>	<b>10.4</b>	<b>11.8</b>	<b>8.5</b>	<b>12.4</b>	<b>6.3</b>	<b>15.1</b>
<b>Year</b>	<b>0.3</b>	<b>0.3</b>	<b>0.7</b>	<b>0.3</b>	<b>0.3</b>	<b>0.3</b>	<b>0.3</b>	<b>0.2</b>	<b>0.3</b>

**Table A11: Contribution of Each Explanatory Factor to the Difference in Inequality Index (Gini Index)**

	Both Sexes				All Men				All Women			
	NCR	Luzon	Visayas	Mindanao	NCR	Luzon	Visayas	Mindanao	NCR	Luzon	Visayas	Mindanao
Gini Index	0.31	0.35	0.40	0.39	0.27	0.32	0.36	0.36	0.36	0.39	0.46	0.44
<b>Residual</b>	<b>0.04</b>	<b>0.16</b>	<b>0.09</b>		<b>-0.10</b>	<b>-0.12</b>	<b>-0.12</b>		<b>-0.03</b>	<b>-0.68</b>	<b>-0.97</b>	
<b>Personal Attributes</b>	<b>0.16</b>	<b>0.44</b>	<b>0.64</b>		<b>0.23</b>	<b>0.54</b>	<b>0.81</b>		<b>0.31</b>	<b>0.77</b>	<b>1.27</b>	
<i>Gender</i>	-0.11	-0.05	-0.08		--	--	--		--	--	--	
<i>Experience</i>	0.04	0.05	0.14		0.12	0.13	0.17		-0.03	0.07	0.32	
<i>Dummies for the highest degree completed</i>	0.23	0.44	0.58		0.11	0.41	0.64		0.33	0.70	0.95	
<b>Sector</b>	<b>0.54</b>	<b>0.18</b>	<b>0.06</b>		<b>0.88</b>	<b>0.64</b>	<b>0.39</b>		<b>0.06</b>	<b>0.01</b>	<b>-0.21</b>	
<b>Occupation</b>	<b>0.25</b>	<b>0.21</b>	<b>0.19</b>		<b>-0.02</b>	<b>-0.06</b>	<b>-0.08</b>		<b>0.65</b>	<b>0.82</b>	<b>0.79</b>	
<b>Year</b>	<b>0.01</b>	<b>0.01</b>	<b>0.02</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		<b>0.00</b>	<b>0.09</b>	<b>0.11</b>	

**Table A12: Contribution of Each Explanatory Factor to the Difference in Inequality Index (Theil Index)**

	Both Sexes				All Men				All Women			
	NCR	Luzon	Visayas	Mindanao	NCR	Luzon	Visayas	Mindanao	NCR	Luzon	Visayas	Mindanao
Theil index	0.18	0.21	0.29	0.27	0.15	0.19	0.24	0.24	0.23	0.26	0.35	0.32
<b>Residual</b>		<b>0.13</b>	<b>0.30</b>	<b>0.24</b>		<b>0.02</b>	<b>0.00</b>	<b>0.00</b>		<b>0.10</b>	<b>-0.41</b>	<b>-0.63</b>
<b>Personal Attributes</b>		<b>0.19</b>	<b>0.40</b>	<b>0.54</b>		<b>0.23</b>	<b>0.49</b>	<b>0.72</b>		<b>0.32</b>	<b>0.67</b>	<b>1.06</b>
<i>Gender</i>		-0.09	-0.02	-0.04		--	--	--		--	--	--
<i>Experience</i>		0.04	0.04	0.10		0.10	0.11	0.15		-0.02	0.06	0.25
<i>Dummies for the highest degree completed</i>		0.24	0.38	0.48		0.13	0.38	0.57		0.34	0.62	0.81
<b>Sector</b>		<b>0.45</b>	<b>0.12</b>	<b>0.04</b>		<b>0.74</b>	<b>0.54</b>	<b>0.32</b>		<b>0.05</b>	<b>0.01</b>	<b>-0.16</b>
<b>Occupation</b>		<b>0.23</b>	<b>0.18</b>	<b>0.17</b>		<b>0.00</b>	<b>-0.03</b>	<b>-0.05</b>		<b>0.53</b>	<b>0.65</b>	<b>0.63</b>
<b>Year</b>		<b>0.00</b>	<b>0.01</b>	<b>0.01</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		<b>0.00</b>	<b>0.07</b>	<b>0.09</b>